

REMARKS

Claims 1-17 remain in the application.

The Rejections:

In the Final Office Action dated August 23, 2004, the Examiner rejected Claims 1-6, 9-13, 16, 17 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,360,085 issued to Yoo et al. and U.S. Patent No. 6,128,116 issued to Dobler et al. and Toyoshima et al. Japanese Pat. Spec. No. JR 54131237A. With respect to Claim 1, the Examiner stated that Yoo et al. teaches in Figs. 1-2 an elevator cab position sensor wherein a tape 8 is placed in the hoistway, magnets 10 are placed on the tape and read by sensors 22 to determine the elevator position, and the sensors may be either magnetic or optical type detectors. The Examiner admitted that Yoo et al. does not illustrate a fixed tape or tape cover.

According to the Examiner, Dobler et al. teaches that for improved speed detection/positioning within an elevator installation, it is advantageous to utilize tape readers as opposed to costly and high maintenance cams/rollers and to place the tape on the rails as the speed of the elevator cars increases over the prior art systems.

With respect to Claims 3-6, 10-13, 17, the Examiner stated that shown within the figure of Dobler et al. is the tape 29 positioned in a groove 15 on the T-rail 16. According to the Examiner, Dobler et al. states that the position and number of tape elements or even the shape of the rail can be changed without altering the accuracy of the system. Thus, it is the Examiner's opinion that to utilize a grooved rail with tape attached within Yoo et al. would have been an obvious engineering design choice to one of ordinary skill in the art to improve speed detection and positioning.

The Examiner stated that the Japanese reference teaches in Figs. 1-11 a selector tape for an elevator wherein a car for an elevator on guide rails (not shown) contains a selector tape 4, the selector tape contains coded data for floor selection and positioning and a cover 11 (paint or coating i.e., Non-magnetic) is applied to the tape to prevent noise. Thus, according to the Examiner, to utilize a cover to prevent noise would have been an obvious engineering design choice to one of ordinary skill in the art.

With respect to Claims 2, 9 and 16, the Examiner commented that the Japanese reference does not state metallic cover but does state that any coating or pasting of another tape may be

applied "or the like" and, thus, the choice of material applied is considered a matter of convenience.

The Examiner rejected Claims 7, 8, 14 and 15 under 35 U.S.C. § 103(a) as being unpatentable over Yoo et al., Dobler et al., and the Japanese reference, and further in view of U.S. Patent No. 6,393,360 issued to Ma (6393360). The Examiner admitted that Yoo et al, the Japanese reference and Dobler et al. do not illustrate the cover details. According to the Examiner, Ma teaches that for a vehicle positioning system it is advantageous in a passive detection system which has coded data embedded in the path (rail), to provide an overlapping cover to protect the coded data (See Figs. 7B, 8B). Thus, according to the Examiner, to utilize an overlapping cover to protect the coded data in a vehicle positioning system would have been an obvious engineering design choice to one of ordinary skill in the art.

Applicants' Responses:

The Yoo et al. patent shows a tape 8 having ends fixed in a hoistway and a plurality of spaced apart magnets 10 attached thereto. The Yoo et al. patent does not show or suggest the following claimed elements:

1. A code carrier fixed along the travel path of the elevator car (Claims 1-17).
2. Code marks of different magnetic permeability (Claims 1-17).
3. A non-magnetic cover attached to the code carrier and externally covering the code marks (Claims 1-17).

The Dobler et al. patent shows a reflective tape 29 disposed on the stem 15 of a guide rail 13 and a reflective tape 28 disposed on the base 17 of the guide rail. Note that the stem 15 is "T-shaped" with an increased thickness head having three surfaces 16 against which guide rollers run. The base of the stem 15 is symmetrical and there is no groove formed in either the surface upon which the tape 29 is mounted or the opposite surface. The Dobler et al. patent clearly states "retroreflective tape 28, 29 disposed on the base and the stem" (Col. 2, Lines 9-10) and **does not** mention or suggest any "groove". Thus, the Dobler et al. patent teaches the placement of the reflective tape on the surface of the guide rail. The Dobler et al. patent alone or in combination with the Yoo et al. patent does not show or suggest the following claimed elements:

1. A code carrier received in a groove formed in an elevator guide rail (Claims 4-8, 10-17).

2. Code marks of different magnetic permeability (Claims 1-17).
3. A non-magnetic cover attached to the code carrier and externally covering the code marks (Claims 1-17).

The tape of the Japanese reference moves with the elevator car along the path of travel and has a constant magnetic permeability, except for the perforations where there is no magnetic permeability. The Examiner stated that the Japanese reference teaches to place a cover (of any type) on the tape to prevent noise. It is not the function of Applicants' cover to prevent noise. Applicants' cover protects the code marks from damage. If the Examiner considers the perforations in the tape of the Japanese reference to be "code marks", then the coating 11 does not cover the "code marks" as defined by Applicants' claims. The Japanese reference alone or in combination with the Yoo et al. patent and the Dobler et al. patent does not show or suggest the following claimed elements:

1. A code carrier received in a groove formed in an elevator guide rail (Claims 4-8, 10-17).
2. Code marks of different magnetic permeability (Claims 1-17).
3. A non-magnetic cover attached to the code carrier and externally covering the code marks (Claims 1-17).

The Ma patent shows a vehicle locating and directing system using a magnetic tape 122 buried in a roadbed 102 and protected by a cover layer 120. Applicants note that the International Class, U.S. Class and Field of Search of the Ma patent do not overlap with the Yoo et al. patent and the Dobler et al. patent, and the International Class of the Ma patent does not overlap with the Japanese reference. The Ma patent is directed to art that is not analogous to the subject matter of Applicants' claims and the other cited references. Thus, one would not be motivated to seek out and combine the teaching of the Ma patent with any of the cited elevator references.

The Ma patent teaches that the magnetic tape 129 be oriented transverse to the direction of travel of the vehicles. However, Applicants' claims define the code carrier as extending along the travel path. Also, there is no mention that the cover layer is attached to the code carrier as defined by Applicants' claims. Furthermore, Ma states that Fig. 7C shows the magnetic tape 122

with twenty narrow channels each encoded as a decimal number, but fails to provide any detail as to how the coding is achieved.

In summary, there is no combination of the Yoo et al. patent, the Dobler et al. patent, the Japanese reference and the Ma patent that shows or suggests the following claimed elements:

1. A code carrier received in a groove formed in an elevator guide rail (Claims 4-8, 10-17).
2. Code marks of different magnetic permeability (Claims 1-17).
3. A non-magnetic cover attached to the code carrier and externally covering the code marks (Claims 1-17).

U.S. Patent No. 4,750,592 issued to Watt is listed on a Notice of References Cited included with the Final Office Action. However, the Examiner did not mention this reference in his comments. Applicants reviewed this reference and found it to be no more pertinent than the references relied upon by the Examiner in his rejections.

In view of the above remarks, Applicants believe that the claims of record now define patentable subject matter over the art of record. Accordingly, an early Notice of Allowance is respectfully requested.